



## Imaging

### NEW AUTOMATED MEASUREMENT OF EFFECTIVE REGURGITANT ORIFICE AREA BY 3D-FLOW CARDIAC ULTRASOUND ANALYSIS

ACC Moderated Poster Contributions

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**Background:** Recently, three-dimensional transthoracic echocardiography has been developed which can measure effective regurgitant orifice (ERO) area by proximal isovelocity surface area (PISA) method automatically. The purpose of this study was to validate its accuracy comparing conventional 2D method.

**Method:** Study population consisted of 23 patients with mitral regurgitation (mean age 67 years, men = 17). 3D data-set for subsequent off - line analysis was recorded simultaneously with ordinary 2D echocardiography. ERO by PISA method was measured using 3D color flow dataset (eSie PISA prototype, SIEMENS).

**Result:** ERO was measured successfully in 21 patients (feasibility 91%). ERO calculated by 3D color flow dataset correlated with ERO by 2D echocardiography, however tend to be overestimated ( $r = 0.76$ , mean difference  $\pm$  2SD: -0.48cm<sup>2</sup> to 1.24 cm<sup>2</sup>).

**Conclusion:** Automated measurement of ERO by 3D color flow data is possible. However, further development is needed to improve its accuracy.

